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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/768,439	02/02/2004	Seiichi Higaki	HITA.0508	9171

7590 08/22/2005

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EXAMINER

FARROKH, HASHEM

ART UNIT	PAPER NUMBER
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2187

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/768,439

Applicant(s)

HIGAKI ET AL.

Examiner

Hashem Farrokh

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 6, 7 and 14-16 is/are rejected.
- 7) ☒ Claim(s) 2-5 and 8-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/2/04, 1/3/05
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

*The instant application having application No. 10/768,439 has a total of 16 claims pending in the application; there are 4 independent claims and 12 dependent claims, all of which are ready for examination by the examiner.*

**INFORMATION CONCERNING IDS:**

The information disclosure statements (IDSs) submitted on 2/2/04 and 1/3/05 have been considered by the Examiner. The submissions are in compliance with the provisions of 37 CFR 1.97.

**INFORMATION CONCERNING CLAIMS:**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1- are rejected under 35 U.S.C. 102(e) as being anticipated by U.S.

Patent Publication No. 2003/0187847 A1 to Lubbers et al. (hereinafter Lubbers).

1. In regard to claim 1, Lubbers teaches:

“A storage system (**e.g., see abstract**) comprising a first storage control device and a second storage control device (**e.g., see paragraph 44, page 4; elements 105 in Fig.**

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**5)** connected so as to be capable of communicating with each other and executing data processing according to a request from a host device,” (e.g., see paragraphs 38 and 42, page 4; paragraph 49, page 5; Fig. 1). *Lubbers teaches a networks storage system with multiple storage sites (e.g., SITES1-SITES3). Each storage site includes a storage cell which contains at least one storage cell (e.g., elements 101A-101D) and a storage controller (e.g., elements 105). Storage sites and the hosts (e.g., elements 105) are all linked together by a network (e.g., elements 103).*

“wherein the first storage control device comprises:”

“first control means for judging whether or not the second storage control device can execute a predetermined data processing function relating to a first request received from the host device and, (e.g., see paragraph 54, page 6) when it is judged that the second control device can execute, (e.g., see paragraph 54, page 6) generating a second request corresponding to the first request and transmitting it to the second storage control device,” (e.g., see abstract; paragraph 10, page 1; paragraphs 54-55, page 6). *For example the initial request to the destination controller is to determine whether it has sufficient resources to service or to execute the request. If the answer is yes or the destination controller is available, the data log, which includes the new command, would be sent to the destination controller.*

“:wherein the second storage control device comprises:”

“second control means for executing the predetermined data processing function based on the second request received from the first storage control device such that the

second storage control device takes over said predetermined data processing function relating to a first request from the first storage control device,” (e.g., see **abstract; paragraph 10, page 1; paragraphs 54-55, page 6; paragraph 71, page 8**). *For example when it is determined that the destination controller is available and has sufficient resources to execute the services, the host I/O command or request that are stored in the data log at the source controller will be sent to the destination controller for execution. One feature of Lubbers’ invention is the load balancing that distributes the load among the controllers, which inherently means that the controller with less load will take over some of the data processing responsibilities of the over loaded controller. Another feature of Lubbers’ disclosure is failover that means if one of the controllers fails, another controller will take over responsibilities of the failed controller (e.g., in this case the predetermined data processing is what ever processing the failed controller was responsible for).*

“and wherein said predetermined data processing function includes direct backup, internal copying process between a pair of volumes, mirroring, or remote copying.” (e.g., see **paragraphs 54-55, page 6**). *For example remote copying between source and destination is a data processing function recited in the claim.*

2. In regard to claim 6, Lubbers teaches:

“wherein the first storage control device retains function management information showing data processing functions executable by the second storage control device,” (e.g., see **paragraph 44, page 4; Figs. 1-5**). *For example controller 105 can be*

*configured to execute data replication management (DRM) for copying data from source to destination storage system*

"and the first control means judges whether or not the second storage control device can execute the predetermined data processing function relating to the first request based on the function management information." **(e.g., see paragraph 54, page 6).** *For example a determination is made whether the destination or second controller has sufficient resources for backup or remote copying.*

3. In regard to claim 7, Lubbers teaches:

"wherein the function management information is generated manually or automatically at the time of definition of the storage system configuration." **(e.g., see paragraph 37, page 4; Figs. 1-5).** *For example the data management and monitoring can be performed by each user through data replication management console (DRMC) which is a part of controller 105.*

4. In regard to claim 14, Lubbers teaches:

"A control method for a storage system comprising a first storage control device and a second storage control device connected to communicate with each other thereby executing data processing according to requests from a host device," **(e.g., see abstract; summary).**

"wherein the first storage control device performing the steps of:"

"receiving a first request from the host device," **(e.g., see paragraph 60, page 6).**

“judging whether or not the second storage control device can execute a predetermined data processing function relating to the received first request, generating a second request corresponding to the first request when it is judged that the second storage control device can execute, **(e.g., see paragraph 54, page 6)** and transmitting the generated second request to the second storage control device, and” **(e.g., see paragraphs 54-55, page 6)**. *For example the first request is to determine whether there is sufficient resources. The second is the remote copying.*

“wherein the second storage control device executing the steps of:

“receiving the second request from the first storage control device, and executing the predetermined data processing function based on the received second request such that the second storage control device takes over said predetermined data processing function relating to a first request from the first storage control device,” **(e.g., see abstract; paragraph 10, page 1; paragraphs 54-55, page 6; paragraph 71, page 8)**.

“and wherein said predetermined data processing function includes direct backup, internal copying process between a pair of volumes, mirroring, or remote copying.” **(e.g., see paragraphs 54-55, page 6)**. *For example remote copying between source and destination is a data processing function.*

5. In regard to claim 15, Lubbers teaches:

“A storage control device connected to a second storage control device and a host device to communicate with each other for executing data processing according to a request from the host device, comprising:” **(e.g., see paragraph 30, page 3; Figs. 1-5)**.

"receiving means for receiving a first request from the host device," (**e.g., see abstract; summary; Figs. 1-5).**

"judging means for judging whether the second storage control device can execute a predetermined data processing function relating to the received first request," (**e.g., see paragraph 54, page 6).**

"requesting means for generating a second request corresponding to the first request when it is judged that the second storage control device can execute the predetermined data processing function," (**e.g., see abstract; paragraph 10, page 1; paragraphs 54-55, page 6; paragraph 71, page 8).**

"and transmitting means for transmitting the generated second request to the second storage control device such that the second storage control device takes over said predetermined data processing function relating to a first request from the first storage control device," (**e.g., see abstract; paragraph 10, page 1; paragraphs 54-55, page 6; paragraph 71, page 8).**

"and wherein said predetermined data processing function includes direct backup, internal copying process between a pair of volumes, mirroring, or remote copying." (**e.g., see paragraphs 54-55, page 6).** *For example remote copying between source and destination is a data processing function.*

6. In regard to claim 16, Lubbers teaches:



“A program stored in a computer readable medium connected to a second storage control device and a host device to communicate with each other for controlling a first storage control device thereby executing data processing according to a request from the host device, **(e.g., see paragraph 30, page 3; paragraph 65, page 7; Figs. 1-5).** comprising:”

“a module for judging whether or not the second storage control device can execute a predetermined data processing function relating to the first request received from the host device,” **(e.g., see paragraph 54, page 6).**

“a module for generating a second request corresponding to the first request when it is judged that the second storage control device can execute,” **(e.g., see paragraphs 54-55, page 6).**

“and a module for transmitting the generated second request to the second storage control device from the first storage control device such that the second storage control device takes over said predetermined data processing function relating to a first request from the first storage control device,” **(e.g., see abstract; paragraph 10, page 1; paragraphs 54-55, page 6; paragraph 71, page 8; Fig. 11).**

“wherein said predetermined data processing function includes direct backup internal copying process between a pair of volumes, mirroring, or remote copying.” **(e.g., see paragraphs 54-55, page 6).** *For example remote copying between source and destination is a data processing function.*

**ALLOWABLE SUBJECT MATTER**

*Claims 2-5 and 8-13 are objected to as being dependent upon rejected based claims, but would be allowable if rewritten in correct and independent form including all of the limitations of the base claim and any intervening claims.*

1. *The primary reason for allowance of claims 2-3 and 8-13 in instant application is the combination with the following limitations: wherein the first storage control device provides a second storage area controlled by the second storage control device to the host device virtually as the first storage area under control of its own, and the first request requests the data processing relating to the first storage area.*

2. *The primary reason for allowance of claim 4 in instant application is the combination with the following limitations: wherein the second request is configured to have the similar data structure to the first request.*

3. *The primary reason for allowance of claim 5 in instant application is the combination with the following limitations: wherein the first control means confirms whether or not the second storage control device can execute the predetermined data processing function relating to the first request before transmitting the second request to the second storage control device.*

**: IMPORTANT NOTE :**

*If the applicant should choose to rewrite the independent claims to include the limitations recited in either one of the claims, the applicant is encouraged to **amend the title of the invention** such that it is descriptive of the invention as claimed as required*

*be sec. 606.01 of the MPEP. Furthermore, the **summary of invention** and the **abstract** should be amended to bring them into harmony with the allowed claims as required by paragraph 2 of sec. 1302.01 of the MPEP.*

*As allowable subject matter has been indicated, applicant's response must either comply with all formal requirements or specifically traverse each requirement not compiled with. See 37 C.F.R. § 1.111(b) and § 707.07(a) of the M.P.E.P.*

### **Conclusion**

The prior art made of record and not relied upon are as follows:

1. U. S. Patent No. 6,108,684 to DeKoning et al. describes Methods and apparatus for balancing loads on a storage subsystem among a plurality of controllers.
2. U. S. Patent No. 5,951,694 to Choquier et al. describes Method of redirecting a client service session to a second application server without interrupting the session by forwarding service-specific information to the second server.
3. U. S. Patent No. 6,871,295 B2 to Ulrich et al. describes Dynamic data recovery.
4. U. S. Patent No. 6,915,379 B2 to Honda et al. describes Storage device for processing an access request from a host and storage system including storage devices.

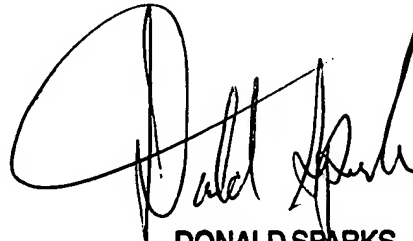
Any inquiry concerning this communication should be directed to Hashem Farrokh whose telephone number is (571) 272-4193. The examiner can normally be reached Monday-Friday from **8:00 AM to 5:00 PM**.

If attempt to reach the above noted Examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Donald A Sparks, can be reached on (571) 272-4201.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published application may be obtained from either private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBS) at 866-217-9197 (toll-free).

*HF*  
HF

2005-08-15

A handwritten signature in black ink, appearing to read 'Donald Sparks', is written over a horizontal line.

**DONALD SPARKS**  
**SUPERVISORY PATENT EXAMINER**